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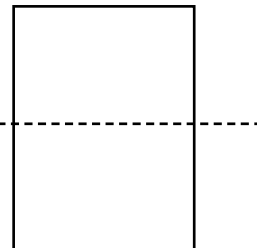
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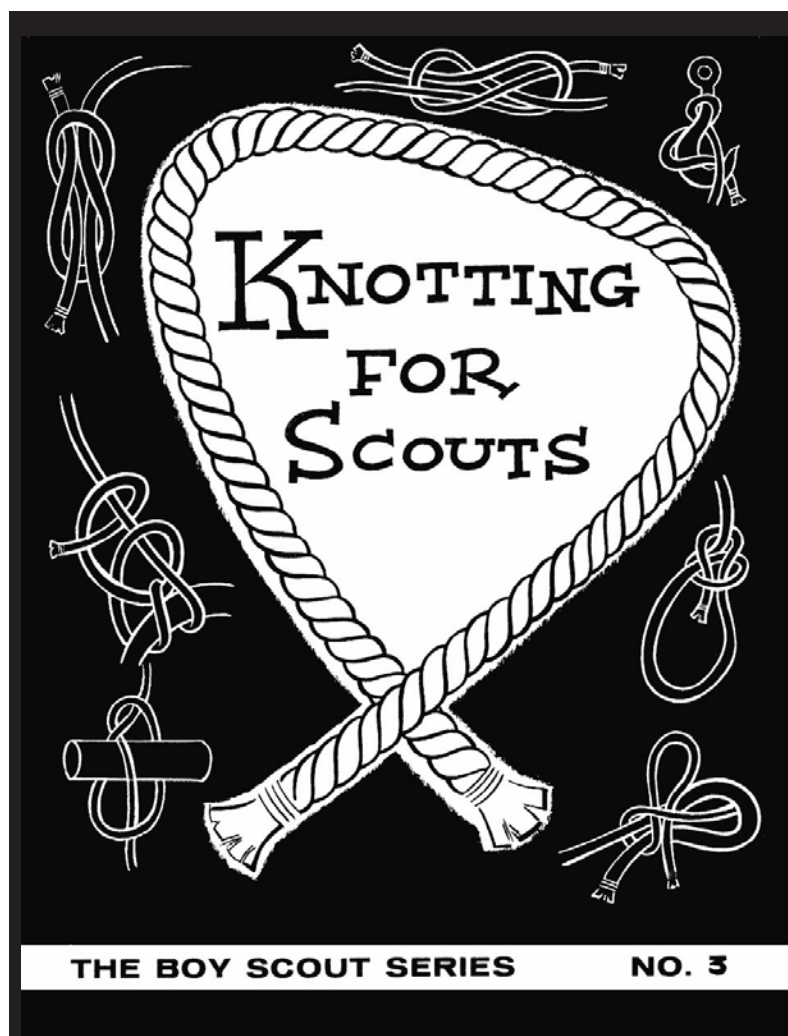
The booklet is small enough to fit into every Scout's cargo pocket on the uniform pants.



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FOREWORD

"Every Scout ought to be able to tie a knot. To tie a knot seems to be a simple thing, and yet there are right and wrong ways of doing it, and Scouts ought to know the right way. Very often it may happen that lives depend on a knot being properly tied", B-P on Knots.

Within the covers of this booklet, Scouts will find all the knots they need to know for their various grade and proficiency badge requirements.

Through study of this book and constant practice with all types of ropes and under many conditions and with good instruction from experts every Scout can make himself thoroughly competent in rope work.

For the sake of brevity the selection of knots has been limited to those generally useful, and where there are several specialized methods of tying knots, we have selected the one that is most adaptable or that gives the best structural understanding.

Editor's Note:

This is an internet edition of an old training booklet brought to you by The Dump at scoutscan.com and the Canadian Sea Scouts Homeport.

The editors have taken care to reserve the original "look and feel" for the sake of historical accuracy.

We believe that this booklet should be in the breast pocket of every Scout and Sea Scout, as much as a notebook and pen.

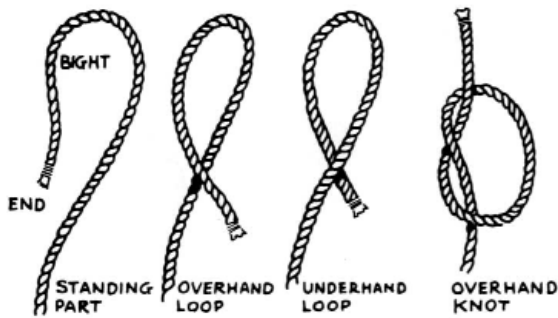
With that view in mind, the publishers grant the right to copy and distribute this file, freely, without of any fees, for the purposes of Scouting and Guiding.

For more historical texts with traditional Scouting topics, visit the The Dump at:

<http://www.thedump.scoutscan.com/>



PARTS OF A ROPE

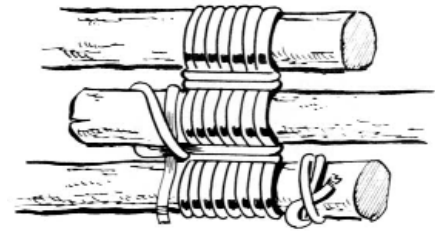


A straight piece of rope does not have definite parts such as a head, body or tail. In order to understand and describe knot tying, we think of it as having three sections - two ends and a standing part. Some knots are formed by two ends (reef knot), some by the end and the standing part (bowline), and some by the standing part alone (sheepshank).

Many knots seem an endless maze of parts. But even the most complex knots can be broken down to a combination of three basic turns - bight, loop or overhand.

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TRIPOD LASHING



To lash three spars together to form a tripod, lay the spars on the ground pointing in alternate directions. Begin with a clove hitch or timber hitch on one of the end spars. Take seven or eight loose lashing turns around all three spars and loose frapping turns in the spaces between. Finish with a clove hitch on the centre spar and hoist the tripod.



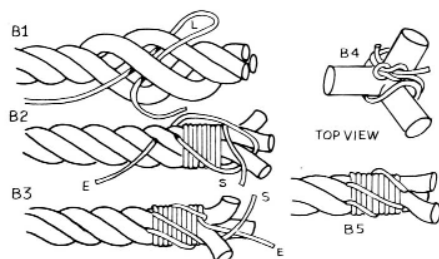
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Take two feet of twine, double back about 3 inches, lay along the rope, near the end to be whipped, as you see in A-1. With the long end of the twine, wind round the rope a dozen times pulling each turn tight and making sure that it lies close to the previous turn. Pass the end S through the loop L as in A-2, do not let the turn slip.

Now pull the end E gently until the loop is about half way through the turns of the whipping, this will lock the ends as shown in the sketch A-4.

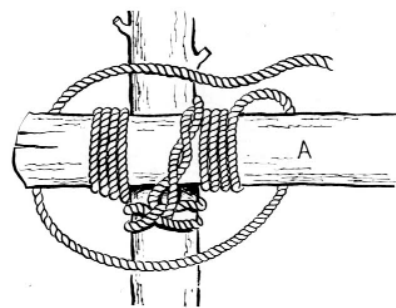
Finally cut off the twine close to the turns of the whipping, taking care not to cut the rope. Try your hand with various sizes of rope so that you become proficient with whippings of all kinds.

SAILMAKER'S WHIPPING



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SQUARE LASHING



This lashing is used whenever spars cross at an angle, touching each other where they cross. The lashing starts with a clove hitch (or timber hitch) around the

upright spar immediately below the horizontal spar. The lashing is then taken in front of and up over the horizontal bar. It then passes behind the upright spar, down in front of the horizontal spar and finally around behind the upright spar, just above the original clove hitch. The process is repeated four times keeping outside the previous turn on the horizontal and inside on the upright. Then three or four frapping turns are taken. The lashing is finished by a clove hitch on the horizontal spar, A. This clove hitch must be snugged and slid near the lashing.

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OTHER BOOKS ABOUT KNOTS

Ashley Book of Knots, Clifford W. Ashley,
Doubleday Dawn and Company, Garden
City.

*Encyclopedia of Knots and Fancy Rope
Work*, Raoul Graumont and John J. Hensel,
Cornell Maritime Press. New York.

Handbook of Knots, Raoul Graumont,
Cornell Maritime Press.

The Key to Knots and Splices, Walter Glass,
Key Publishing Co.

Knots, Splices and Fancy Rope Work,
Spencer, Brown, Son & Ferguson.

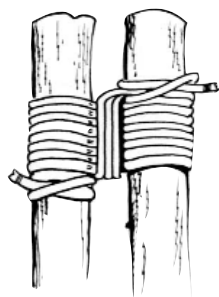
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SHEER LASHING

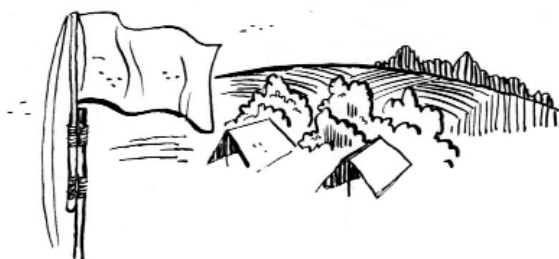


This is used for lashing together parallel spars and for forming "sheer legs" which support bridges and the like.

Begin with a clove hitch around one of the spars. Take seven or eight turns about both spars. These turns need not be very tight but the frapping turns taken around them should be pulled very snug.

Finish with a clove hitch on

the spar opposite to that on which the first clove hitch was laid.



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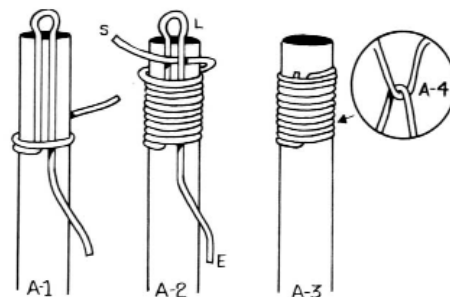
CARE OF ROPE

Obtain a piece of rope about one inch in circumference (that is, 5/16" in diameter) and about 20 feet long. A short piece is of little or no practical use. Because you are going to use this rope for a long time as part of your regular equipment, treat it carefully and prepare it for hard service.

WHIPPING

One important preparation is the protection of the rope ends against wear. Unless protected, the twisted strands will loosen and fray. A figure-of-eight knot at each end will serve as a temporary stop but should not be left permanently. As soon as possible the ends should be treated in one of the two following methods.

SIMPLE WHIPPING

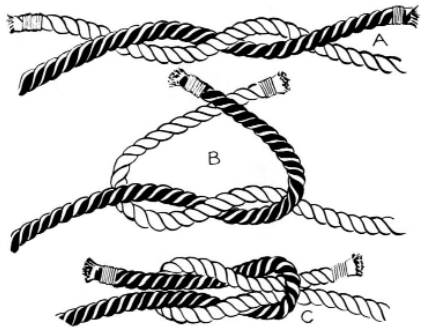


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REEF KNOT

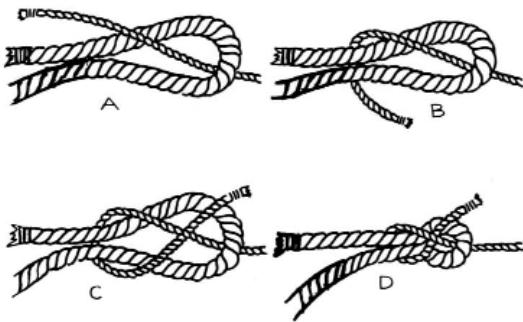
Begin with an over and under crossing Fig. A, and then bring the ends back above in a second similar crossing Fig. B. The completed knot Fig. C is snugged up by pulling on the ends. Note that it makes no difference whether the first crossing is tied left over right or right over left, as long as the second crossing corresponds to it correctly. A reef knot can be loosened easily by taking an end and a standing part of one rope in each hand and pushing the bights apart. A square knot can also be loosened by pulling the ends and standing part of one rope in opposite directions.

The reef knot is used in all first aid work or for joining two pieces of string or cord of equal thickness. It is not recommended for joining rope.



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SHEET BEND



The sheet bend is the most important knot for joining two rope ends and is especially useful when the ropes are of unequal size. A permanent loop - tied, seized or spliced - can be substituted for the right hand portion of the knot.

A loop is first formed with the thicker rope, the thinner is then threaded through this loop, Fig. A, passed right around the end and standing part of the thicker rope B, tucked under as in C and tightened by pulling on the standing part of the thin rope D.

You can see how the thin rope jams against the loop of the thick rope to prevent it from slipping.

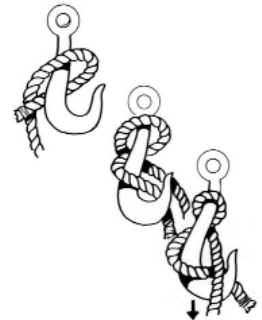
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BLACKWALL HITCH



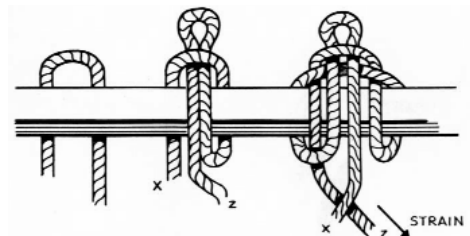
These quick hitches only hold when subjected to a constant strain or when taken in the middle of a rope with both ends fast. A stopper in the knot increases their security slightly. They are generally used to attach a rope temporarily to a hook or similar object. The single blackwall is an ordinary half hitch and is not as secure as the double. The difference between the two can be seen by comparing the diagrams. One is simply a single half hitch, the other is the double.

DOUBLE BLACKWALL HITCH



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HIGHWAYMAN'S HITCH

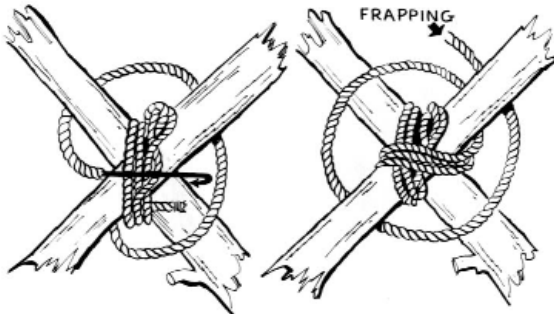


This knot is so named because it enabled the highwaymen of old to tether his horse to a post with one end of the rope and when he vaulted into the saddle for a quick getaway he pulled the other end and away came the whole rope. It is useful for mooring boats and tethering horses. Place the loop behind the spar, take end Z, make a loop in it and pass through the first loop, then take end X and pass it through the loop formed by end Z, strain can be taken on Z. Pull on X to release.

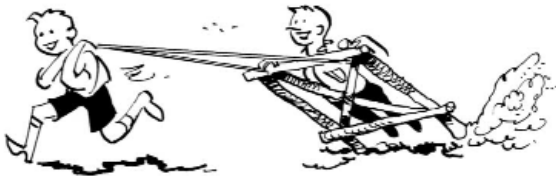


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DIAGONAL LASHING



This lashing is used to "spring" two spars together. The lashing is started with a timber hitch around both spars. The timber hitch is tightened so as to draw the two spars together. Three or four turns are then taken around one fork, and three or four turns around the other fork. Two frapping turns are taken about the lashing at the point where the spars cross, and the lashing is finished off with a clove hitch around the most convenient spar.



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First open the strands near the end of the rope to be whipped, if possible, without unlaying the ends. Place the end of the twine between two strands of the rope, pass it around the third strand, and bring it out again between the strands through which it entered, B 1.

Close the strands again, leaving the large loop, L in the twine, and some inches of the end of the twine free; make several tight turns, working towards the end of the rope. Then without letting those turns become loose, put the loop L over the end of the same strand round which you passed the twine. This is important B 2.

Pull the end E until the twine is tight against the turns of the whipping, and is also lying snugly between the strands of the end of the rope.

Bring the end E up to the end of the rope and between the strands of the ends, to meet the standing part S as you see in B 3.

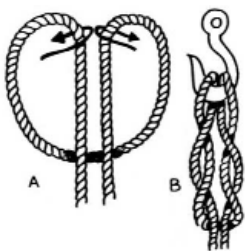
To finish off, join these two with a reef knot, pulling each part of the reef very tightly, making sure there is no slack; cut off the ends very short, B 4; force the strands together again, which has the effect of hiding the reef knot, and the finished whipping should look like B 5.

This is a good method of whipping as you do not have to pull the twine underneath the turns of the whipping with the risk of snapping the twine.

After you have done it a few times you will probably prefer it to any other way of whipping a laid rope.

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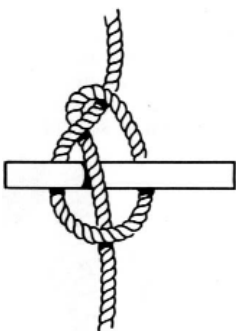
CAT'S-PAW



This knot which is really a form of hitch is a more satisfactory way of attaching a load to a hook than either of the blackwall hitches. It will not slip off and needs no constant strain to make it hold.

Form two loops as in Fig. A. Turn loops inward for one or two complete turns and hang the eyes so formed over the hook or object of attachment as in Fig. B.

MARLIN SPIKE HITCH



This knot can be used as a quick method of getting a purchase in a rope for pulling. It is so named because a marlin spike, or small spar is run through a loop as illustrated.

Make an overhand loop in the rope, form a bight in the standing part and push up through the loop, put the marlin spike or spar through this as shown.

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SLIPPERY REEF KNOT



This knot is tied in the same manner as a reef knot but before pulling it tight, slip one of the ends back through the bight. By pulling on this end the knot can be untied easily and quickly.

SURGEON'S KNOT

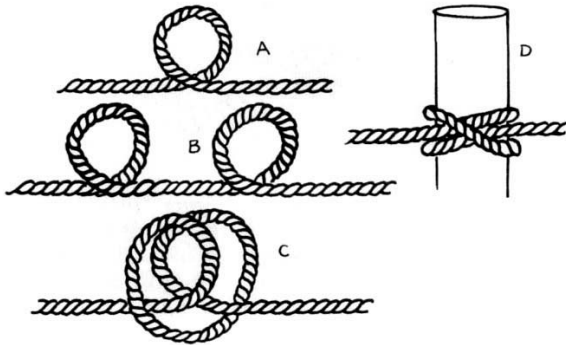


Another variation of the reef and the only difference is by having the left end taken around the right end twice instead of once on the first crossing. The double first crossing gives it enough friction to hold until the second can be tied.

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CLOVE HITCH NO. 1

Make two similar loops, side by side in the rope, Fig. A and B, slide them together so that they look like C. Slip over the end of the pole and pull tight as in D.



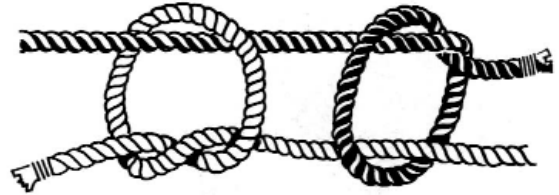
This is a most useful knot and is the start and finish of some lashings and is widely used in boat work, gadget making and pioneering and for making rope ladders. Passing around an object in one continuous direction, it puts almost no strain on the fibres.

There are many different ways of tying this knot, some useful, others merely interesting and amusing. Try your hand at tying as many variations as possible.

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FISHERMAN'S KNOT

As the name indicates this is a knot used by fishermen and is used for joining two pieces of gut, which would not hold if we used a reef knot or sheet bend.



It can be used for joining thin twine, if you think the normal method would slip, remember however this knot tends to jam and therefore is difficult to untie.

To tie, lay the two pieces to be joined alongside one another with the ends in opposite directions, make an overhand knot in each end around the standing part of the other, pull the standing parts in opposite directions and draw the two overhand knots together.



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BOWLINE



A very important knot, the bowline forms a loop that will not slip or jam no matter how great the strain. In its many adaptations it is useful in first aid and life saving. A thorough understanding of the several variations of this knot will be of great value to every Scout whether ashore or afloat. Start by forming an overhand loop and a standing part, spaced so as to make the resulting loop large enough for its purpose. The free end is taken up through the loop, around the standing part and back down through the loop.

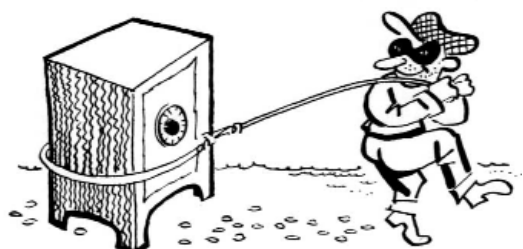
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MIDDLEMAN'S KNOT

This is a useful non-slipping knot. It can be used for hauling heavy weights in the manner of a harness in fact anywhere that a quickly tied, non-jamming, non-slipping knot is needed.

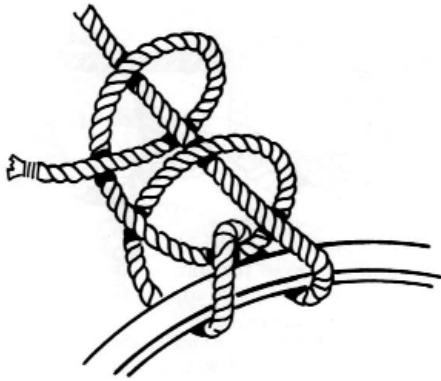


Make an overhand knot and pass the end A through the direction of the arrow then make another overhand knot around end B of the rope. When the loop is strained the knots run together and remain fast.



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FISHERMAN'S BEND



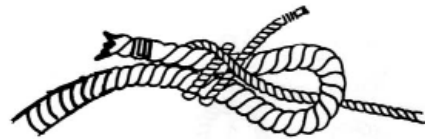
This is an excellent knot for attaching a rope to a light anchor, a ring or a rectangular piece of stone. It can also be used to rig up a swing.

Take two turns through the ring or around the stone and bring the end over the standing part and through the loops (as shown). Finish with two half hitches and pull taut.



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DOUBLE SHEET BEND



If the ropes are of very different thicknesses or are wet there is a risk, unless the tension is steady, that the knot may not hold fast, so in this case we make another turn with the thin rope and tuck it a second time between itself and the loop.

SLIPPERY SHEET BEND

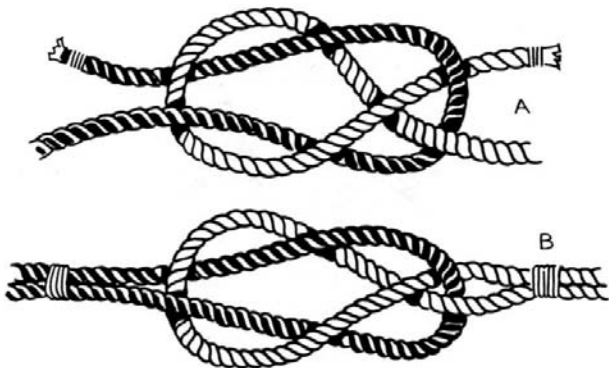


To untie the sheet bend quickly or if you think it might jam, use a slippery sheet bend. This is made by starting in the normal way then, instead of tucking the end, make a small bight or loop in the end of the thin rope and tuck that. Pull the end of the thin rope and the knot is undone.

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CARRICK BEND

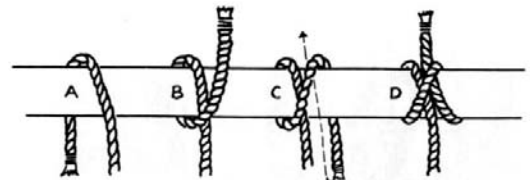
This knot is used with large ropes or harness as in towing. It is never used unless both ends are seized as in Fig. B onto their standing parts. A single Carrick bend is begun by forming a bight in the first rope and weaving the other end of the rope around it as shown in the illustration. After the seizing is finished put the strain on both ends.



The Carrick bend may be tied flat for decorative purposes. If the lower bight is extended the Carrick bend may be plaited for a further length or as long as desired.

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CLOVE HITCH NO. 2



When it is necessary to form a clove hitch around a spar which is closed at both ends or around a pole too high to toss over, we use this method. Make a simple turn around the bar, across the rope over and tuck it as shown. Fig. D shows the completed knot.

SLIPPERY CLOVE HITCH

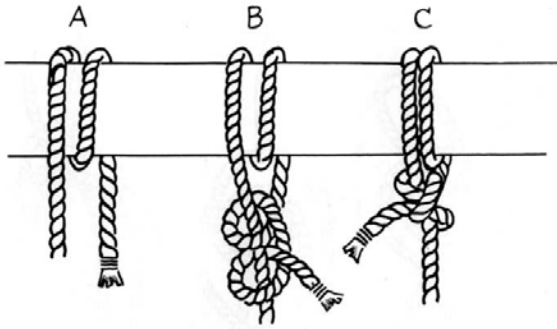


This can be tied in either of the two methods shown previously, the only difference being that a bight is formed and passed back through the last turn. This allows the clove hitch to be quickly untied.

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ROUND TURN AND TWO HALF HITCHES

This is a simple method of fastening a rope to a spar, ring or another rope. It is especially useful for towing purposes.



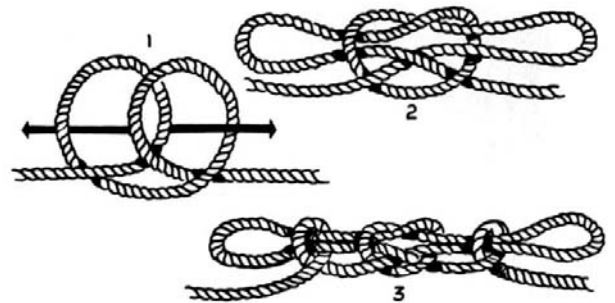
The round turn is shown in Fig. A and means that the rope makes two turns around the spar. You can see in Fig. B that the second half, the two half hitches is like making a clove hitch on the standing part of the rope with the free end. Pull tight at this stage and it will then look something like B. Sometimes the free end is fastened with a light whipping to the standing part for greater security.

An important point to remember is that the pull or tension on the rope in these hitches must be as shown in the sketch that is at right angles, or nearly so to the spar. If this isn't done there is a risk that the rope may slip along the spar.

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FIREMAN'S CHAIR KNOT

This knot is used for rescue purposes. Be certain you can make it quickly and correctly. Throw the two loops in the standing part of a long rope. Pull the overlapping portions of each loop through the other loop as indicated by the arrows and 1 and you will get knot shown in 2.

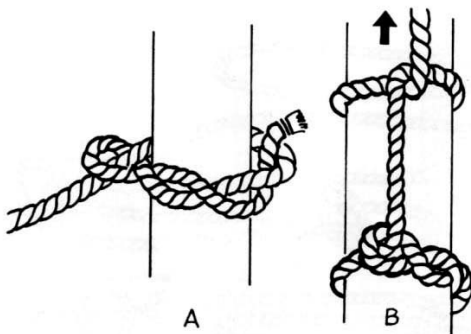


Adjust the two loops at this stage in order to pass around a body. One, the smaller will allow it to pass over the head and shoulders and rest under the arms, with the knot near the chest - the other long enough to go under the knees.

When the loops are correct, pull the knot tight and throw a half hitch on each loop as in 3 as you did for the sheepshank, but make them snug up to the centre knot and tighten.

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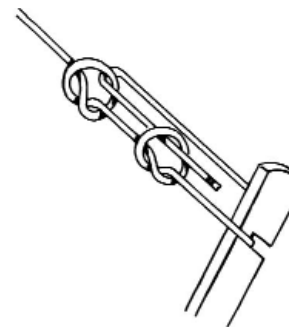
TIMBER HITCH



This important hitch will hold firmly and can be tied and untied quickly. This hitch is used to draw two spars together when starting a diagonal lashing. It is also a quick and easy method of fastening a rope to a spar for a short time, to haul it up or along. It will hold only if a steady tension is kept on the rope; if spar is to be hauled along pointing in one direction, it is better to put a half hitch on the spar first in the direction you want it to point. Fig. B shows this method of using. To tie take a turn around the spar bending the rope back around itself and twisting the end two or three times and pulling on the standing part to tighten.

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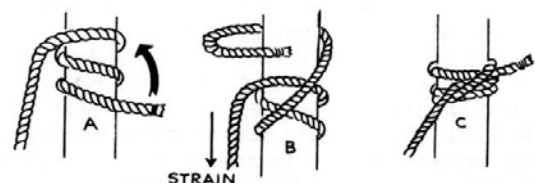
GUY LINE HITCH



As its name suggests this knot is used in securing tent guy lines or guys for pioneering projects and larger gadgets. It is started by casting two overhand knots in the rope some distance apart, the running end is then passed around the peg, carried upward, then down through the two overhand knots. The knots

are then pulled tight. The guy line is lengthened or shortened by loosening the two knots and adjusting the running end.

ROLLING HITCH



This useful knot will not slip even on glass smooth surfaces. This knot is really clove hitches with an extra turn in the direction of the strain on the standing part. The diagrams explain how this hitch is made.

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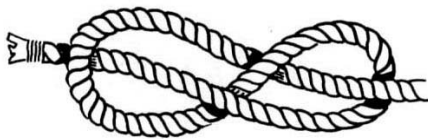
OVERHAND LOOP



To make a loop in the end of the rope use this knot. It can be tied quickly but if a great deal of tension is placed on it it tends to jam.

Simply take a bight in the end of the rope and make an overhand knot as shown in the sketch, and pull tight.

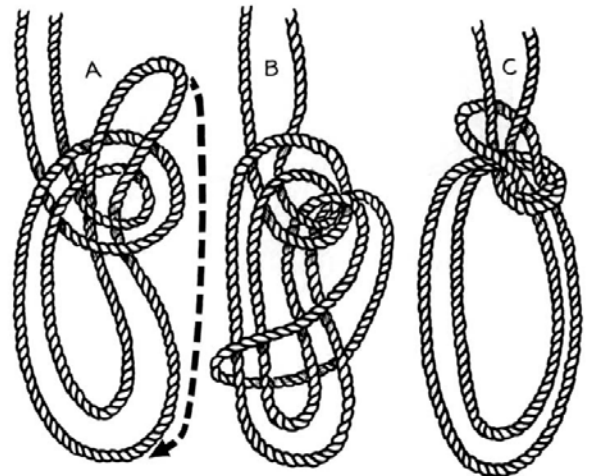
FIGURE OF EIGHT KNOT



This is a good stopper knot, useful in tying parcels where the slip knot is necessary or a rope forming a lariat loop. Note that when snugged, the end of the rope projects at a right angle to the standing part.

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BOWLINE ON A BIGHT

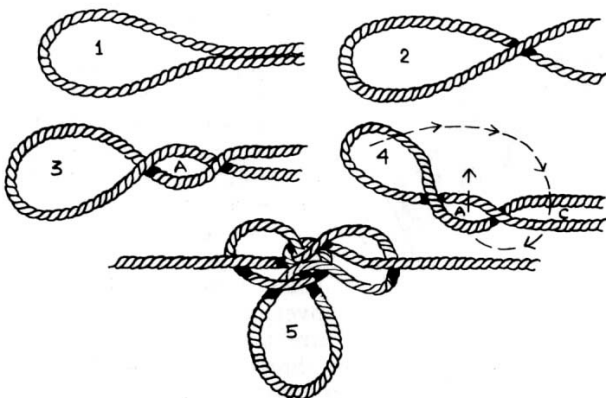


This knot is used as a chair knot. Form a good size bight and throw an overhand loop as shown in Fig. A, bringing the ends up through the loop so formed. Open the end loop and bring it down and around the entire knot as shown in Fig. B, until it ends up against the standing part as shown in Fig. C. Set the knot securely before putting weight on it.

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BUTTERFLY KNOT

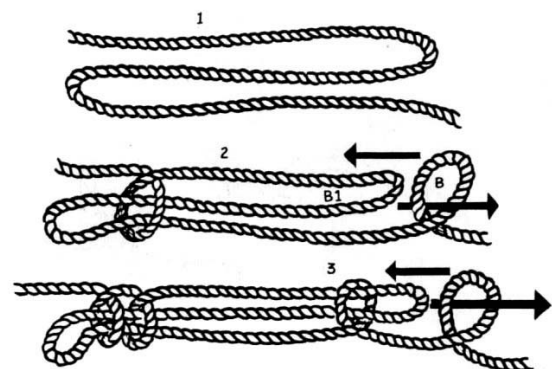
This knot provides one that will not slip and which may be tied without using the ends of the rope. It is used for providing a harness, for hauling heavy loads and for climbing.



Pick up a bight of the rope in one hand and hold both parts in the other Fig. 1. Twist the bight once to cross the two parts Fig. 2, twist again to produce hole A Fig. 3. Fold bight back over loop passing tip down between the two parts C and up through A Fig. 4, now pull bight through and tighten knot.

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SHEEPSHANK



This knot is used for shortening a long rope which is fastened on both ends. As in the case of a tent guy line or blanket line. After taking up the slack as shown in Fig. 1 form an underhand loop as shown in B, slide it over the bight B 1, and pull it taut. Do the same thing on the other end to complete the knot. To lock the sheepshank to keep the loops from sliding off add a second half hitch as in Fig. 3 at each end.

To render the sheepshank more secure the bight may be seized or toggled to the standing part.

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